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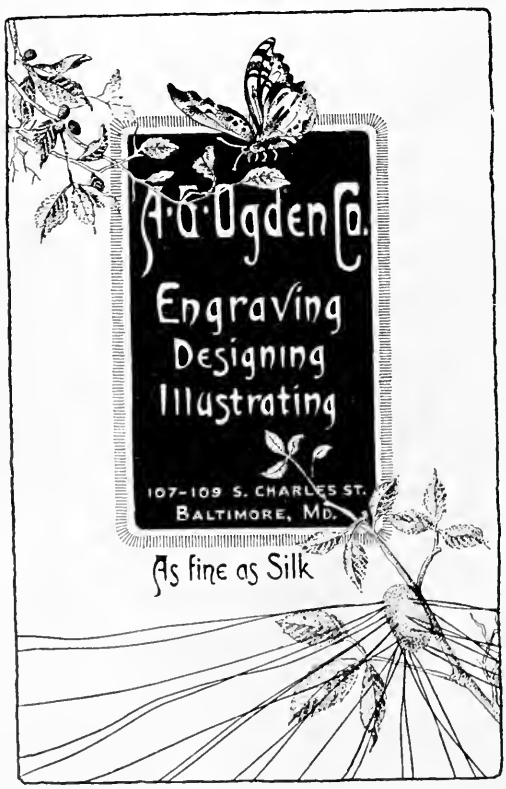

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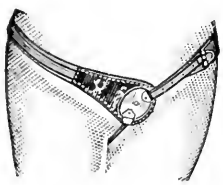

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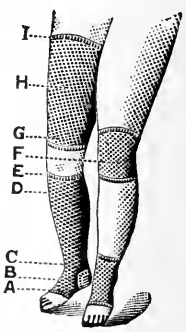

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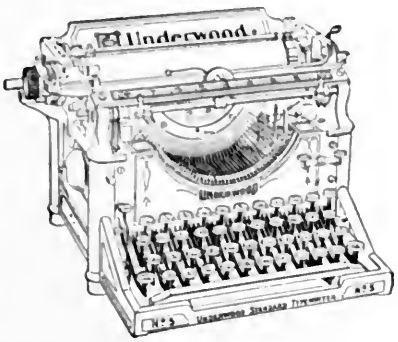

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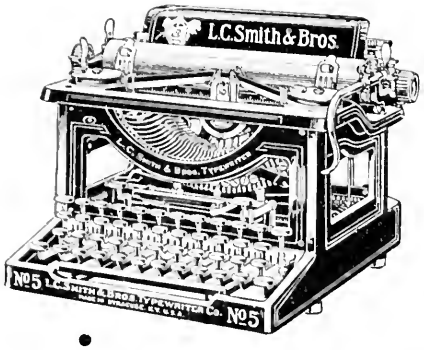

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WHAT ROLE DOES GASTRO-ENTEROSTOMY PLAY IN THE TREATMENT OF GASTRIC AND DUODENAL ULCERS?

By Frank Martin, M.D.,

Professor of Operative Surgery and Clinical Surgery in the University of Maryland.

AND

RADIOGRAPHIC DEMONSTRATION OF THE FUNCTIONING OF THE PYLORUS FOLLOWING GASTRO-ENTEROSTOMY.*

By Albert Hynson Carroll, M.D.,

Associate in Gastro-Enterology, University Hospital.

A CASE of recent date that has been under my care, which was so overflowing with interesting findings pertaining to this most important subject, is my chief excuse for presenting a few thoughts on a subject which, doubtless, most of you present regard as somewhat weary and worn out. But in viewing the condition as presented in this above-mentioned case, much food for thought was obtained.

Briefly, the case cited was one of *gastric ulcer*, upon which a so-called *gastro-enterostomy* had been done in one of the Washington clinics. As the case was referred to me by Dr. Albert H. Carroll, and through his courtesy I have been kept in touch with her through the long interval of treatment that has been necessary, I wish to thank him for the interest he has shown in this special case, going so far as to personally prepare for me the accompanying interesting drawings, and likewise for his kindness in offering to interpret the accompanying X-ray plates. In consequence of his familiarity with the case, I beg to briefly report his clinical findings, which are as follows:

"This patient, M. L., is a colored woman, unmarried, aged 26. She has been operated upon three times: first in Washington, six months previous to coming to my service at the University Hos-

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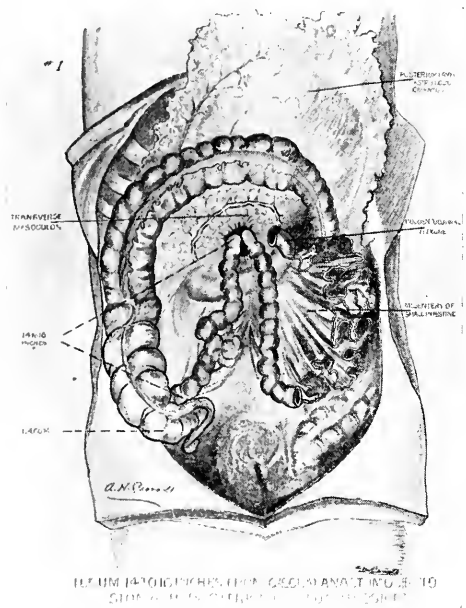
pital, and upon inquiry it was learned from the Washington surgeon that he had operated for *gastric ulcer*. He stated that he had done a *gastro-enterostomy*. The second operation was exploratory in character, and was performed after she entered the University Hospital, in this city, nine months ago—June 20, 1913. The object and aim of this second operation was to find out what the condition was and to correct it if possible. There was such chaos found on opening the abdomen that it was with difficulty that the true condition could be ascertained, but after getting it, in a measure, cleared up, a stoma, or anastomosis, was found which had been made between the *posterior wall of the stomach* and the

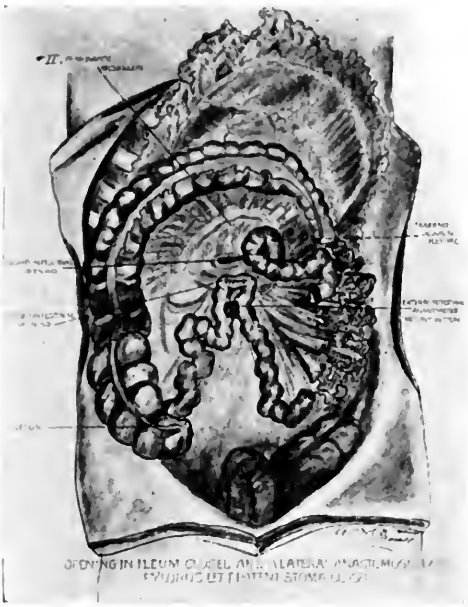


BEFORE CORRECTIVE OPERATION.

lower portion of the ileum. The third and last operation, which was the corrective operation, was done at St. Joseph's Hospital on December 23, 1913.

For the sake of brevity, negative findings will be omitted. Her family history is not important, and with the exception of the present trouble, which began about three years ago, she has been an exceptionally well woman. Neither "family history," "past history" nor "habits" shed any light as regards the etiology. She stated that before she was operated upon in Washington (six months previous to coming to the University Hospital), she had had much pain in the abdomen and in the epigastrium an hour or an hour and a half after eating; that she had vomited blood; that food relieved these pains for a short period, and that she had

become constipated also about this time. These acute symptoms had followed a period of a year of what she called *"bad indigestion."* She states that for a short time after the operation for ulcer, she was relieved of most of these pains, but that later more severe pains, obstinate constipation, vomiting and a sense of great pressure in the epigastrium became almost constant. It is of interest to note that she said that, "once the bowels were freely opened, undigested food was passed for a time, within a few hours after its ingestion." This was later found to be true. Because of these increasing troubles, she came for treatment to the University Hospital on June 20, 1913, where I first saw her.



AFTER CORRECTIVE OPERATION.

It is only necessary to state that the examinations of the respiratory tract, the cardio-vascular and the nervous systems, as well as the genito-urinary tract, were all negative. The examinations by the gastro-enterologist revealed an intense mucus achylia gastrica. There was no blood found in the gastric content, and a specimen, which was bile stained and which was without doubt duodenal content, contained bile, but no blood. This was secured with the Einhorn duodenal tube. A "fasting stomach test meal" of rice demonstrated a *retention* of some of the meal for a *period of 12 hours.* Stool examinations were negative to blood, but at times practically an entire meal of almost unchanged food residue was found three to five hours after ingestion, following "high enema."

The bony framework of the patient is quite normal, with a wide infrasternal angle and the stomach only slightly ptosed and dilated. On palpation of the abodmen there was tenderness in the umbilical region, even on slight pressure, and dull pain in the region of the cecum and ascending colon. There was distention. No tumor mass could be made out. The entire lower abdomen was rather tympanitic and splashing sounds were heard at various times in the ascending colon and in the stomach.

Much difficulty was experienced in securing the earlier series of X-ray pictures, first, because of the vomiting of the patient; second, because of the thickness of the abdomen, and on account of not having at our disposal a strong enough apparatus to penetrate it. These plates definitely, though faintly, demonstrated that some bismuth was leaving the gastric bag, not only by the stoma, but also by the pylorus. The last series was made with a modern apparatus. (Series No. 6, Plates 1, 2, 3, 4.)

Since this dual exit was known, and also because of the persistent vomiting and pains, plus a 12-hour retention, notwithstanding the usual treatment, consisting of lavage, liquid diet and HCL, it was deemed best to open the abdomen, not with the expectation of finding an ulcer, but because partial occlusion was suspected, not only of the stoma, but of the pylorus."

First Operation—Findings at Operation—June 20, 1913.

The operation was a distinctly exploratory one, done to relieve abdominal discomfort. The appendix was found to be very ugly and chronically inflamed; but this was absolutely incidental. She had a very chaotic condition, many adhesions, and when I got down to the pylorus, I found that patent, and no evidence of any stenosis at that point. Then I sought for the site of the gastro-enterostomy which we had been told had been done. This search was attended with great difficulty on account of the tremendous mass of adhesions in and about the upper abdomen. There seemed to be a loop of small intestines which was not strangulated, but the lumen of which was largely obstructed from the adhesions, and twisted upon its mesentery in such a way as to make almost a definite hernial ring, and impinging upon another loop of small intestine which got into and under these bands of adhesions. After getting this chaos cleared up, I found an anastomosis on the posterior wall of the stomach, but instead of its being between the posterior wall of the stomach and the *first portion of the jejunum*, to my utter surprise I found it has been made between the *posterior wall of the stomach* and the *last portion of the ileum*, about 20 to 24 inches from the ileo-cecal valve. There was so much difficulty in finding the anastomosis and getting down to the seat of the new stoma and straightening out the adhesions that I did not dare prolong the operation further, for fear of shocking the patient beyond repair. So I left this anastomosis as it was and simply removed the appendix, which was in marked need of

removal, and closed her up with the definite understanding that she should be told of the condition and later some effort at repair be made.

The true status of the case was that since the pylorus was patent, the food contents of the stomach found their way out through this natural outlet. The small intestines were able to carry on their physiological function, in spite of this patent side-tracking stoma. Thus nourishment was kept up. This case beautifully exemplifies, or rather, corrects, erroneous ideas that some may entertain as to the movement of gastric contents after gastro-enterostomy. * * *

The patient was told to report at regular intervals after discharge, and this she did. Although not entirely relieved, she was moderately comfortable for some weeks, although at times the symptoms of vomiting and nausea were as severe as formerly. Five months after the exploratory operation, in November, 1913, she returned for readmission. At this time she was suffering almost constantly, and had lost much weight. No beds being available, she was sent to me at St. Joseph's Hospital. Again medical treatment was instituted, but with little improvement. She was sent to the operating-room on December 23.

SECOND OPERATION—FINDINGS AT OPERATION—DECEMBER 23, 1913.

I operated for the purpose of disconnecting this anastomosis between the ileum and the stomach. After freeing the adhesions in the upper abdomen and getting the coils of small intestines unravelled, the anastomosis was dissected loose, and the operative procedure employed was the same as that which I make use of in doing a pylorectomy; that is, the peritoneal and muscular coats of the stomach were dissected back to the submucosa, which was clamped and ligated and severed by thermo cautery and then invaginated with purse-string sutures. The same procedure was made use of in closing the ileum after the anastomosis was disconnected. I found that in invaginating the lateral opening into the lumen of the ileum that it diminished its lumen to such an extent that I was afraid it would be impinged upon, and not be sufficiently large for the passage of the food residue; so rather than trust to it absolutely, I concluded to do an entero-enterostomy or a lateral anastomosis in this loop of the ileum immediately adjacent to where the anastomosis was done. This was done by the use of a Murphy button in order to save time. The abdomen was closed and uninterrupted recovery ensued. (Diagrammatic drawings, Nos. 1 and 2.) The Murphy button was passed on the thirteenth day after the operation. She was discharged apparently in excellent health on January 21, 1914.

Later Observations.—The patient reports about twice a month. She is able to cook and do the laundry work for a family of four. She is obstinately constipated; but as a whole considers herself

to be well off.* At no time since she first came under observation have there been any of the classic symptoms of gastric or duodenal ulcer, either before the gastro-ileostomy was undone or since that time. The reading of the X-ray plates will demonstrate the conditions before and after the gastro-ileostomy was undone and the pylorus allowed to functionate normally. (Series No. 6.)

The findings and the facts noted in the above case bring up many interesting points. And among these, apart from the unusual and unheard of point of anastomosis, the one of the most interest to me was the beautiful demonstration that I was able to give at my first operation of the stomach peristalsis. In spite of its dual openings, its definite peristaltic wave continued, conducting the gastric contents to the pylorus regularly and rhythmically, in spite of the fact that the new stoma was still patent and sufficiently large for gastric contents to go this way. But I say, in spite of this, the definite waves of muscle contractions rhythmically progressed to the normal aperture, namely, the pylorus.

Furthermore, examination of the pylorus revealed no evidence of antral, pyloric or duodenal ulcer then present, or any indications of having been present. These facts, I think, definitely answer the question which immediately arises: If this patient's entire small intestinal tract was side-tracked off by this operation (namely, by an anastomosis being made between the posterior wall of her stomach and *the last portion of her ileum, as was the case*), *in what way did she get nourishment* sufficient to carry on life? As I have said, this question is answered by the fact that in spite of the new stoma, the bulk of the food contents from the stomach must have gone on through the pylorus and down on through the small intestines, and in that way nourishment was obtained sufficient for the maintenance of life.

Now to come back to the subject, what is the rôle gastro-enterostomy plays? It has been largely conceded that many stomach and duodenal ulcers are finally considered grave enough to be classed as surgical (although the treatment offers at best a vexed and perplexing problem to both physician and surgeon). Still, what has been done with them in the past has been the operation of gastro-enterostomy, and this procedure has been resorted to on account of the supposedly favorable influence exerted upon these ulcers of the stomach, situated in the antrum, or at the pylorus, or in the duodenum. It has been the operation of choice, because by adopting this procedure it was thought a condition was established favorable to the healing of the ulcer. However, it has likewise been conceded that this operative procedure has had no effect upon ulcers in other localities of the organ (namely, on the lesser curvature, in the fundus, or elsewhere).

But *have these favorably results following gastro-enterostomy*

*This is no doubt due to the presence of a hemorrhoidal condition, since this symptom has cleared up following a recent operation (May, 1914).

been of lasting nature? I believe statistics show that they *have not* been lasting; but that, on the other hand, recurrence or recrudescence of the ulcers in and about the pylorus and the first part of the duodenum has taken place in at least 45 per cent. of the cases, and that quite a large per cent. of them have later become malignant.

This, although a melancholy truth, is nevertheless a fact; and therefore one naturally asks, is there *no better, or more lasting,* operative intervention for these very important and common conditions. Conditions which are so very far-reaching in their consequences, with the varied array of complications, all of which are so serious in character, such as disabling contractions, obstructions, hemorrhage, perforation and malignant degeneration. Each and any one of these are of such importance as to command a chapter to itself, and thorough study for their correction. Acute perforation of gastric or duodenal ulcer is alone, by all odds, the most serious, and, I might say, the most tragic disaster that can happen in the human body. No disaster in surgery is more perilous nor so rarely recognized early. Does it seem reasonable, then, that an operation such as gastro-enterostomy, with its unscientific principles, could possibly meet and correct these serious consequences arising from stomach ulcer? And yet this has been for years the "cure-all" for almost every stomach malady that exists.

Let us discuss for a moment some of the known factors of interest concerning the influence gastro-enterostomy has upon gastric and duodenal ulcers, and in that way try to modify the operative procedure, in order that it may be more lasting in its effects as applied to the cure of these ulcers.

Since we do not know the etiology or exact pathogenesis, any more than we know the exact cause of cancer of the stomach, we know that with the one, which we regard as the *pre-cancerous condition of cancer of the stomach*, so likewise with the other, that chronic and constant irritation is recognized today, just as it has long been regarded in the past, as an important elemental factor in the etiology. Recently, however, many experimental workers have advanced the theory that gastric and duodenal ulcers are due to infective states of the stomach and duodenum. That given a minute or gross defect in the gastric mucosa, produced by trauma or what not, such minute or gross defects will grow into ulcerations, provided the stomach contains pathogenic bacteria.

Barclay's views and conclusions regarding the etiology are worth while, and I herewith quote the following: "Septic conditions in the mouth or other sources of swallowed septic matter, constipation, mucous colitis and a variety of other conditions are capable of producing spasmodic contractions of various parts of the stomach. The spasm produces a narrowing of the lumen that is of great functional importance, causing a definite obstruc-

tion to the passage of food. By an indiscretion of diet or want of mastication, something too large to pass easily through the channel has to be forced through by powerful peristalsis. This leads to an abrasion at the point where the lumen is narrowed and where there is the constant irritation of food passing over it. A surface is exposed that is not structurally fitted to withstand the action of the gastric juice. In this way an ulcer is formed which in its turn perpetuates the original spasm that determined the site of the ulcer. A vicious circle is established, the ulcer now being actually the cause of spasm that prevents healing, so that even if the original cause of the spasm is removed, there is little, if any, improvement in the local condition."

It seems to me that one must be fully conscious of the importance of this spasmodic element as a complication of organic lesions in this region of the stomach, and this undoubtedly is the most important keynote of the whole argument. Whether the spasm at the pylorus is the effect of the ulcer or, on the other hand, the cause of the ulcer, is a very difficult question to decide. To repeat, since we do not know their exact causation, it is difficult to state definitely just how our therapeutic agents exercise a healing influence on them.

We do know, however, that gastro-enterostomy (and we must understand by that the creation of a new opening between the anterior or the posterior wall of the stomach and the first portion of the jejunum) exercises an influence on antral, pyloric or duodenal ulcers (namely, those situated in the *grinding portion* of the stomach and the first portion of the duodenum) in practically only two ways: either by diverting or side-tracking the contents of the stomach away from the pyloric orifice into the jejunum, or by permitting a reflux into the stomach of the alkaline contents of the jejunum, which neutralizes the acid gastric contents. One of these means alone or both together favorably affects ulceration in these particular areas, and *supposedly* aids in the *healing of same*, but definitely has *no effect* upon ulcers located in other portions of the stomach, lesser curvature, fundus, or elsewhere.

Furthermore, it is pretty definitely understood that when an ulcer is situated in the pyloric region of the stomach, or first portion of the duodenum, there is accompanying it, or in consequence of it, a spastic contraction of the pyloric muscle, which is more or less constant, and in a measure partially, and in some cases completely, occludes this orifice. And in accordance with this belief it is further known that ulcers situated in other sections of the stomach have no such influence on the pylorus. Therefore, when we have this partial pyloric stenosis due to spastic contraction, in consequence of the ulcer, then the influence gastro-enterostomy has is a favorable one, and is exactly the same, *and as favorable*, as the effect obtained in those earlier cases of gastro-

SERIES NO. 1. PLATE NO. 1.

SERIES NO. 1. PLATE NO. 2.

SERIES NO. 1. (CASE 4990) GASTRO ENTEROSTOMY PLUS PYLORECTOMY

Plate No. 1. Twenty minutes after a small bismuth meal. The bismuth is leaving freely by the stoma. The jejunum is filling rapidly. There is no evidence of a dragging at the site of the stoma, as in many instances where gastro-enterostomy alone has been done. The outline of the stomach is regular and normal in shape and position, with the exception of the "filling defect" at the pyloric end, where the invagination of the prepyloric portion was done in closing the opening after pylorectomy. Plate No. 2. Taken one hour later. The stomach is nearly empty. Bismuth masses well along towards the caecum. (The first plate in this series was similar to No. 1, but did not tell the story so graphically.)

SERIES NO. 2. PLATE NO. 1.

SERIES NO. 2. PLATE NO. 2.

SERIES NO. 2. (CASE 3789) GASTRO-ENTEROSTOMY.

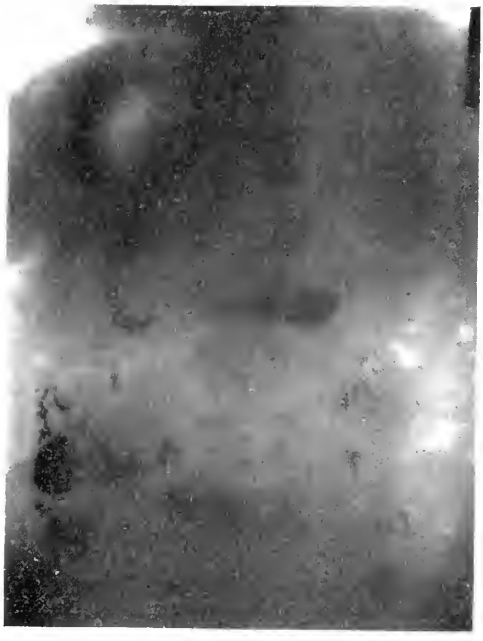
A previous operation for gastric ulcer. Dilated stomach. Vigorous peristalsis in all the plates. Relaxed pylorus in No. 1 and No. 2. Obstruction to the progress of the gastric contents notwithstanding a patent pylorus and a stoma. The obstruction was due to an angulation of the jejunum near the stoma. Great dilation of the duodenum as a result of this. Practically no bismuth was leaving by the stoma. No. 1, "immediate plate." No. 2, one hour later. No. 3, two hours after the first. No previous meal was given.

SERIES No. 2. PLATE NO. 3.

SERIES NO. 3 PLATE NO. 1.

SERIES No. 3.—GASTRO ENTEROSTOMY.

Operation six years ago for gastric ulcer. A very large opening was made in this case, as is the custom with this operator. No. 1. Stomach appears to be pulled far to the right and the bismuth is seen leaving the stoma very rapidly, while only a small amount is entering the duodenum by way of the pylorus. No. 2. Two hours later. Stomach nearly empty. A partially or incompletely filled cap, with flecks of bismuth seen in the duodenum, and bismuth well on the way to the cæcum. (A previous meal had not been given.)



SERIES NO. 3. PLATE NO. 2.

SERIES NO. 4. PLATE NO. 1.

SERIES NO. 4. (CASE 4027) GASTRO-ENTEROSTOMY.

Operation five years ago for duodenal ulcer (?). Now gastric ulcer. These plates were taken without a previous bismuth meal and at short intervals. Notice the rapid filling of the jejunum with bismuth, which has entered it via the stoma in No. 1, and the filling of the duodenum in Nos. 2 and 3. The pyloric end of the stomach appears drawn to the right by perigastric adhesions. The first bismuth liberated from the stomach through the stoma (Plate 1) passes on rapidly, and is seen in the pelvis in Plate 2, while in this plate the distended prepyloric portion and the completely relaxed sphincter allows a rapid evacuation of bismuth into the duodenum. No. 3 shows stomach more than half empty, with an hour-glass appearance, faint shadow of bismuth in the duodenum and the residue well along into the ileum.

SERIES NO. 4. PLATE NO. 2.

SERIES NO. 4. PLATE NO. 3.

SERIES NO. 5. PLATE NO. 1.

SERIES NO. 5. PLATE NO. 2.

SERIES NO. 5. (CASE 3382) GASTRO-ENTEROSTOMY.

No. 1. Note the patency of both the stoma in the first plate, as demonstrated by the well filled loop of jejunum, and in No. 2 of the pylorus, by the bulging of the duodenum close to this pyloric sphincter. In Plate 1 the cap is seen to be partially filled also. The first effort at expulsion of gastric content has resulted in a large quantity leaving the distended stomach by the open stoma, but some of the bismuth has already passed the pylorus. In Plate 2, however, the early and marked egress by the stoma is not observed to continue, and only a faint trace may be seen in this region, while the greatest effort at expulsion is demonstrated by the filling of the duodenum. This dense duodenal shadow is no doubt due to a blocking in the passage near the point of gastro enterostomy.

SERIES NO. 6. PLATE NO. 1.

SERIES NO. 6. PLATE NO. 2.

SERIES NO. 6. (CASE 3130) ILEUM ANASTOMOSED TO THE STOMACH.

Plate No. 1, taken immediately after bismuth meal, shows the ileum distal to the anastomosis well filled. Plate No. 2, taken forty five minutes later, shows the upper part of the small intestine becoming filled with bismuth which has entered from the pylorus, as well as a definite shadow of bismuth entering the ileum from the stoma. That which has entered by the normal route shows as a large dark mass in the lower right quadrant of the plate (Plate No. 2). Plates Nos. 3 and 4 were made after the anastomosis of the ileum to the stomach had been undone and the pyloric opening alone left patent. These were taken three months after the corrective operation, which consisted, first, of separation of the ileum at its attachment to the stomach and after the openings in both stomach and ileum had been closed, and a lateral anastomosis done with the aid of a Murphy button. This lateral anastomosis was necessary because of the possibility of a too great construction, which was feared might result from closing the opening in the ileum. Bismuth is seen freely passing through the pylorus, notwithstanding a constriction of the site of corrective operation.

SERIES NO. 6. PLATE NO. 3.

SERIES NO. 6. PLATE NO. 4.

enterostomies performed for starvation in consequence of the pylorus being organically closed by stricture or tumor.

As we all know, in these cases the results are marked and brilliant. The gastric contents no longer pass through the pyloric orifice, but through the new stoma, and thus the irritation from the food, exerting a harmful effect on the ulcerated area, is done away with because of the irritating agent being diverted to the stoma. After healing of the ulcer takes place, if it does, the spasm of the sphincter muscle ceases, and the food contents of the stomach revert back to the pylorus, this now being patent for its exit, and it no longer passes out through the stoma. These are surgical facts—what, then, is the consequence?

There is a prevailing opinion among the many medical and some surgical men that the stomach is a passive reservoir during digestion, and that when a new opening is created at the most dependent point of the organ, that gravity alone will cause the gastric contents to pass through this new opening into the small intestines. Therefore, a gastro-enterostomy has been regarded by them as a drainage operation, and the idea arose in the past that it was of paramount importance that the new stoma must be placed at the lowest point of the stomach, in order to insure good drainage. In order to further aid in the accomplishment of this purpose, the patients have been placed in the upright posture following operation, the operator stating that the gastric contents would more speedily gravitate through this dependent opening. Those who have leaned closely to this idea have been unmindful of the fact of the true muscular contracting force of the stomach, which forces food contents rythmically toward the pylorus, and that its normal physiological propelling power is directed always, as it should be, toward its own natural exit, namely, the pylorus. The drainage opening so called, or stoma, will not drain so long as the pylorus is patent, as is so clearly and graphically demonstrated by the findings in the above case, and from a study of the accompanying X-ray series.

Cannon ingeniously offers valuable conclusions on this subject in his book on the "Mechanical Factors of Digestion," and clearly points out that the stomach is not at any time during digestion in the condition of a passive reservoir. He states: "The cardiac end is exerting a positive pressure, and so long as food is present the pyloric end is the seat of continuous peristalsis, and if the pylorus is patent, these waves of peristalsis direct the food contents to this natural opening, even though there be a stoma, and gastro-enterostomy being a drainage operation, is, therefore, out of the question." It has been experimentally proven that the hydrostatic conditions in the abdominal cavity are such that gravity drainage from the stomach is impossible. As a proof of this last statement, it has been experimentally shown that "when a gastro-anastomosed stomach is filled with water, the latter does not run out of itself, even though the animal is in an upright

position, and, as has been clearly pointed out by Kelling, Cannon and others, it is an important fact to bear in mind that material never *moves along any part of the alimentary canal unless the pressure is greater on one side of it than the other.* Furthermore, it has been shown that the chyme always takes its normal course through the pylorus, if the latter is patent, rather than through any artificial opening."

The conclusions, therefore, may be justly drawn that if the pylorus is patent, the gastric contents are forced out through this natural opening, even though portions at times also pass through the anastomosis. It is only when the pylorus is definitely closed that the entire contents of the stomach pass through the anastomotic opening into the jejunum. This, it seems to me, is the main factor in determining the influence that gastro-enterostomy exerts on gastric ulcers. By the spasm at the pylorus the gastric contents are diverted away from the ulcerated area. But, as Cannon wisely states, "We should not deceive ourselves by the supposition that the operation permits this region to enjoy entire relief from the peristalsis and the undue muscular activity in consequence of it, or the marked hyperacidity which is present in many of these cases." Relief and help does come in this way, and also by the reflux of the alkaline juices from the jejunum; this is conceded to be a fact, and, furthermore, is clinically noted shortly following the operation of gastro-enterostomy.

After healing takes place, the spasm of the pyloric sphincter muscle relaxes. The pylorus again becomes patent, and the stomach contents no longer freely pass through the new anastomotic orifice, but revert back to the patent pylorus. Is it, then, any wonder that there is such a high percentage of recurrences? At least one of the original causes of the ulcer return, the trauma that exerted itself at the pyloric orifice again takes place, the stoma frequently in a measure closes and ceases to afford an exit for the stomach contents, and the old ulcerated area is very likely to start into activity again. These two factors, namely, the new stoma and the neutralizing effect of the gastric content, do not stay the muscle contractility, and therefore does not put it completely at rest, which is so important a factor in healing. I believe the neutralizing effect is not sufficient in itself to be of marked utility. Therefore, we may conclude that gastro-enterostomy can accomplish good only in such ulcers as are situated near the pylorus. This area constitutes four-fifths of the ulcer-bearing area of the stomach. * * *

Barclay and Cannon, along with Hertz, whom both quote, have given a deeper insight into the mechanics of digestion than most of the others put together. Naturally, the surgeon, in dealing with the pathological conditions which he encounters, must base his efforts upon the primary physiological and mechanical facts which have been established.

To sum up, from the surgical point of view, I would say, first, that gastro-enterostomy is of value only in pyloric and duodenal

ulcers attended with pyloric spasm, and is always of lasting effect; second, it can be of no value in ulcerations situated in other parts of the organ, although the symptom of hyperacidity is markedly relieved in many of the cases by it; third, when the pylorus becomes patent, the artificial stoma tends to contract and close, and there is present a tendency for the reformation of the ulcer; fourth, is it not worth while, under these circumstances, to adopt a means which may be of more lasting effect and unattended by this high percentage of recurrences?

The high percentage of recurrences, the serious and ever present complications, and the tendency to malignant degeneration, which is far more common than hitherto suspected, being estimated as present in 70 per cent. of the cases of cancer of the stomach, warrant, in my judgment, a more radical and efficient method than is offered by gastro-enterostomy alone. Gastro-enterostomy does not offer permanent relief in correcting these complications.

Statistics show that in 70 per cent. of the cases of cancer of the stomach there is a pre-cancerous history of ulcer. These facts alone seem to me to warrant excision of the ulcer-bearing area, and in all cases the operation of pylorectomy offers a greater promise of success than any other operative procedure that we have at our command. The consensus of opinion today is that the ulcer-bearing area should be removed, and it is best removed by pylorectomy. But the criticisms causing it not to be in widespread favor are that it is attended with too high a mortality. This mortality is given from 12 to 15 per cent., whereas the mortality attending gastro-enterostomy is given as 1½ to 2 per cent. I feel that this is an unfair criticism of the procedure, and it appears to me that the mortality that is given is out of all proportion and entirely too high. I further believe that the operation of pylorectomy should be done in such a way as to have the mortality no greater than that attending gastro-enterostomy.

In my own service the mortality attending pylorectomy has been less than the mortality attending gastro-enterostomy. The few cases that I have recently done for ulcers (five in all) have been unattended with mortality, and the surgical recovery was unattended by any serious disturbance. The greatest proof of the wisdom of this operative procedure in these few recent cases has been that in three out of the five the report from the microscopic findings was that of "beginning malignancy." This, I think, speaks more forcibly for the operative procedure than anything I know of.

The operations of pyloric occlusion which have been suggested by numerous operators are inefficient and unscientific, and in no way are to be rationally considered. Such an occlusion as devised by von Eiselberg, namely, by completely dividing the stomach from the duodenum and suturing the two ends, seems to me to offer nothing that is to be commended. The mortality

would probably be quite as high as in a definite pylorectomy, and, furthermore, it offers no protection to the patient from this oncoming possibility of malignant degeneration. Therefore, as gastro-enterostomy alone cannot meet the requirements, in that it does not combat the tendency to malignant degeneration, it should play but a partial rôle in the treatment of gastric ulcers.

There is one condition in which gastro-enterostomy may still be considered the operation of choice: in those cases of benign stenosis where the lumen of the pylorus has been almost entirely occluded and is permanent in character. These cases seek relief from starvation, and are markedly helped by gastro-enterostomy.

Finally, pylorectomy meeting the various requirements, protecting against recurrence of the ulcer, eliminating the possibilities of complications, and removing definitely that chief source of carcinoma, seems to me to merit more definite recognition.

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DR. MARTIN has very kindly suggested that there be gathered and shown, at the conclusion of his paper presented to you tonight, a series of lantern slides of cases which have had a gastro-enterostomy performed, with the object in view of demonstrating graphically, by means of these radiographs, that gastric contents will continue to pass from the stomach, provided the pylorus is patent, by the pylorus, notwithstanding the presence of the new opening following gastro-enterostomy.

It is not the object to interpret all of the radiographs which are reproduced, and it is only necessary to call attention to those very illuminative features which are common to all. It has been necessary to limit the number of series presented, and also the number of plates in a given series. However, it may be mentioned that the earlier photographs, representing a large number of cases, did not lend themselves for reproduction, having been taken before our laboratory was equipped with a high-power and rapid apparatus. These plates, however, demonstrate as positively, although less graphically, the same phenomena as do the later ones.

Six studies in all will be reviewed. Five of these are gastro-enterostomies, while one is a case of pylorectomy plus gastro-enterostomy. In one the ileum was accidentally joined to the stomach. This last affords material for very instructive study.

At once, *without a further analysis* or discussion, attention might be called to *a shadow of bismuth,* which is *seen in the duodenum in every series.* This is common to all, with the exception of the case in which a pylorectomy has been performed.

This shadow in the duodenum represents bismuth which has come there either by way of the pylorus or it has been forced there against the peristaltic duodenal waves of contraction. If the last be true, it would have left the stomach via the stoma. Again, we can conceive that a portion of it may have made its journey from the gastric bag by both routes.

However, when we bear in mind the greater intragastric pressure found in the prepyloric portion of the stomach, and also remember that the contraction waves continue toward the pylorus without interruption until lost in the pyloric sphincter, we must admit that with a patent pylorus any gastric content caught by these waves will leave the stomach through the pylorus as long as these peristaltic wavelike contractions continue. This has been experimentally shown repeatedly in animals. The demonstration is perfect in the reading of these radiographs in man.

No doubt much confusion and an erroneous conception has resulted as regards the rôle that gastro-enterostomy plays because of a false interpretation of the X-ray plates taken following this operation. We may with profit briefly study the photographs in order to acquire a more accurate conception of the physiological and mechanical principles involved and exhibited by them.

It is noticed that in the "immediate plate" bismuth is seen at once to have invaded the intestine by way of the stoma; while, as a rule, in the same plate, none is seen in the duodenum, although the pilleus ventriculi or "cap" may or may not contain bismuth. It is very easy to jump to the conclusion that "all the bismuth meal will leave by way of the stoma, and that none has or will enter the duodenum normally." First, it must be remembered that the pylorus does not open *immediately* upon food entering the stomach. Its activities depend upon various stimuli, mostly reflex in character, and when it does open, only a *small amount* is allowed to pass at a time. A rapid tube is necessary to "get" this, while the stoma, which is a hole, and not a sphincter, will allow gastric contents to pass if it is forced open or held open.

Immediately following a full bismuth meal, the wall of the stomach at the site of the stoma is stretched. This tends at this time to hold the hole open, and the added pressure present as a result of the distending meal will result in a rapid early passage of a quantity through the stoma. This early portion shows up very clearly in a photograph taken immediately after the meal, while the former or duodenal bismuth in very small quantity may not be seen in the duodenum in the "immediate plate."

A second or later plate in the series always shows bismuth passing through the duodenum. Hence we must not make the mistake of believing that the stoma has afforded the only means of egress when a painstaking and rational study of our series of plates will correct any such false impression.

Before attention is specifically called to the various series reproduced, let us grant that, in X-ray studies, the bismuth continues to leave by the stoma as rapidly later as at first. The stomach then would be empty in a very short time. Actual ballooning of the gut would follow, and symptoms of obstruction would not be beyond conception. We might also anticipate that a reflex closure of the pylorus, which follows the ballooning of

any portion of the small intestine, would take place. *Such rapid emptying does not occur.*

Furthermore, the flow is lessened through the stoma or completely stopped whenever a peristaltic wave passes over the area in which the stoma is located. These views have not been emphasized, and this is my reason for calling attention to them here, in order to make the reading of the plates less difficult. All are no doubt familiar with the fallacy of the "gravity" and similar unsound contentions, hence they are not mentioned.

In Nos. 1 and 2 of series No. 1 we see the shadow of a stomach following *pylorectomy plus gastro-enterostomy.* The stomach is in a normal position. There is a "filling defect," caused by the invagination of the pyloric end of the stomach, after the excision of the ulcer-bearing area. This is in extreme contrast to many other plates reproduced, which show stomachs with the pylorus drawn out of position, with irregular outlines at the site of the anastomosis and in several instances of actual partial obstruction, caused no doubt by kinking, following tension. The bismuth is seen entering the intestine slowly and regularly. There is no rushing or crowding of bismuth in its journey.

In series No. 3, plates Nos. 1 and 2, we see bismuth passing through *both openings in both plates.* In this case a very large opening has been made by the operator. Although the pylorus is pulled far over to the right, there is no blocking from angulation or duodenal kinking. Nor is there a crowding noticed in this series.

In series No. 4, and particularly in series No. 2, the duodenum is greatly dilated. The pylorus is seen to be open in several of these plates, and *bismuth has passed through it,* but has been obstructed in its passage. The bulging has not resulted from pressure on the distal end, where the bismuth may be supposed to have entered from, but this bulging came about because the pumping, grinding prepyloric portion had forced the contents through the patent pylorus and on into the duodenum. Here again is an illustration, only slightly different from the phenomenon observed in the remainder of the plates, of the functioning of the pylorus, notwithstanding the presence of a patent stoma.

Series No. 6, Nos. 1 and 2 are of the case in which the *ileum* had accidentally been *anastomosed with the stomach,* and these were taken before the corrective operation. In No. 1 bismuth is seen leaving by the stoma, while in No. 2 it is leaving the stomach *by both routes.*

After the ileum was loosened from the stomach and the pylorus alone left as a means of exit, Nos. 3 and 4 were taken. In these the pylorus is seen to be properly functioning, and the content is leaving the stomach in a normal manner, notwithstanding the almost "hour-glass" contraction following the corrective operation and the bunching of bismuth in the jejunum and ileum.

The two diagrammatic drawings I and II are intended to illustrate the condition found before the corrective operation and later. (Case No. 6. Ileum anastomosed with the stomach.)

Experimentally, this condition might be brought about in the laboratory, but the discovery of it and the study of it with the X-ray afford valuable and definite information regarding the functioning of the pylorus, which, I trust, these radiographic studies will have proven, functionates, when patent, notwithstanding the presence of a gastro-enterostomy.

*The radiographs were, except in two instances, made in the University Hospital X-ray laboratory by Dr. Chandlee and Dr. Walton. Without their generous aid this study could not have been made. I wish also to thank Dr. Arthur Shipley and Dr. Spruill for the use of material, and to express my appreciation for the opportunity afforded me by Dr. Martin to read into his paper this brief summary of the cases exhibited.

TREATISE ON DISEASES OF THE SKIN FOR THE USE OF ADVANCED STUDENTS AND PRACTITIONERS. By Henry W. Stelwagon, M.D., Ph.D., Professor of Dermatology in the Jefferson Medical College, Philadelphia; Dermatologist to the Philadelphia Hospital; Consulting Dermatologist to the Howard Hospital, to the Pennsylvania Institution for the Deaf and Dumb, to the Pennsylvania Institution for Feeble-minded Children, and to the Widener Memorial Training School for Crippled Children; Member of the American Dermatological Association; Honorary Member of the Society of Dermatology and Syphilography of Italy; Associate Member of the Society of Dermatology and Syphilography of France, of the Vienna Dermatological Society, and of the Berlin Dermatological Society. Seventh Edition, Thoroughly Revised. With 334 Illustrations in the Text and 33 Full-page Colored and Half-tone Plates. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. 1914. Cloth, $7.50 net.

Since the appearance of the last edition of Stelwagon's Treatise on Diseases of the Skin rapid strides have been made in certain fields of dermatology, notably syphilis, leprosy, sporotrichosis, pellagra, ringworm and tropical affections. In order to bring this standard work up-to-date, Stelwagon has therefore felt constrained to rewrite his book so as to incorporate these changes and make it available to the largest extent. Amongst the other additions may be mentioned prurigo nodularis, granuloma pyogenicum, benign sarcoid and keratosis blennorrhagia. As heretofore, the illustrations are a particularly attractive feature of the book. In fact, the author seems to make a specialty of illustration, and well he may, for a good illustration certainly is of material assistance in enabling one to thoroughly comprehend any given lesion. It is therefore with an easy conscience that we predict the present volume will prove more sought after and useful than any of the predecessors.

THE HEALTH OF THE CHILD IS THE HEALTH OF THE NATION.*

By J. A. Nydegger, M.D.,
United States Public Health Service.

The awakening of the nation has come, and the conservation of our resources is the cry. We are beginning to realize that, owing to our careless manner and methods, the vast natural resources of our country are being wantonly wasted, and there is danger of their exhaustion. Yet, take the most desirable part of the world, stored with great natural resources, and without the brain and brawn of healthy men to develop them, what are they worth? Not one cent. On what does the greatness of a nation depend? Is it in lands? No. Is it in commerce? No. Is it in manufacture? No. Is it in fleets and armies? No. All these are but secondary considerations.

Without health of the people no nation would succeed. *The greatest resource* of a nation is its healthy people—healthy mentally, morally and physically. This great doctrine applies equally as well to the subdivisions of a country, States, counties, municipalities and communities. Without health of the people no nation would succeed. A citizen without health is often a minus quantity when resources are being considered.

The successful completion of the greatest undertaking of the present age, or of any age, the construction of the Panama Canal, was made possible only by maintaining and preserving the health of the people engaged in building it. The great French nation signally failed in this undertaking because it failed to conserve the health of the workmen and guard them from disease.

The health of the people is also the beginning of happiness. Without health there can be but little happiness. The greatest resource of a nation is its healthy citizen, I *repeat,* and health, then, is the first duty of citizenship.

We have been so often told of the value of our grain products, and of our cattle and hog products, but we have failed to realize that the greatest asset in this country from the point of view of dollars and cents is our National *Health.* The capital value of the eighty-five and a half million inhabitants of the United States in 1907 Professor Fisher of Yale University estimates to be at least two hundred and fifty billion dollars. Disease and death result in social waste. It is waste largely because it is preventable. Forty-two per cent. of the one and one-half million deaths in the United States every year could be prevented or postponed. One-

*Address before the Senate Committee on Agriculture and Labor of the Maryland Assembly on the child-labor bill at the request of the Maryland Child Labor Commission, March 17, 1914.

third of the *three* million people who are sick in the United States every year are in the working period of life. Most of these diseases are preventable.

Take the most desirable parts of the world—lands beautiful to behold, with vistas of fertile villages and wooded mountains, wanting but the brawn of man to develop them; to work the mine, to run the mill, to glean the forests; *but without health*, how feeble would the workers be! Here and there a spot would show where venturers had endeavored to till the soil, to work the mine, with but little progress made.

Now that we are convinced that the greatest asset of any people and of any community is health, let us consider for a few minutes what has been done and what *we are* doing to maintain this high standard of health, so vitally necessary for the progress and prosperity of a people.

Every American child is entitled to the best that we can give him in everything—good food, good clothing, good homes with good hygienic and sanitary provisions, good training and teaching and good moral surroundings—to best fit him to grow up into a healthy citizen, well equipped to fight the great battle of life. When we fail to provide these, we fail in a great public duty. We fail to give the child a square deal—the square start in life—we give him a handicap, we start him in life with the worst possible handicap he could have. A poorly-developed body, poorly nourished, with lessened resisting power to the inroads of disease, and he falls an easy prey owing to the lessening of his vitality.

It is also highly important for us to understand that the child is peculiarly susceptible to his environment, physically, mentally and morally, and that impressions made in these tender years are permanent and lasting. The hygiene of early life and of boyhood and girlhood days is of the greatest importance in connection with the subject of political economy and the prosperity of a nation.

It is of the very highest importance that those who are in any way connected with the young should have uppermost in mind that the greatest asset of a State is its healthy citizen, and that unless we do provide proper surroundings and safeguard the child with all these precautions, we cannot expect the children to grow up into healthy citizens.

As a people, we spend comparatively little money on the conservation of health, while vastly greater sums are expended annually in the United States to prevent disease among animals than among human beings. But we are growing, and we are gaining in knowledge in this respect every day, and we expect the millennium will soon be at hand when the public will fully understand this.

The uniform child-labor law, adopted by the majority of the States, making the minimum age of child labor 14 years, is a most excellent law. It is understood that when your Legislature

had this proposed measure before it for consideration two years ago, that as a special privilege to the county canning industries the minimum age was fixed at 12 years.

All of us who know anything about the effects of long and arduous hours of labor, coupled with undesirable sanitary conditions existing in the factories, know of the resulting injuries entailed on the health of the growing child. The younger the age at which these children go to work, the greater is the injury resulting to them, and which is shown in their constitution throughout life. I should say that even 12 years is entirely too young an age for a child to be engaged in labor of this description. Now, to wish to amend the existing child-labor laws so as to permit children of 10 years of age to work in these factories is altogether undesirable from many points of view, and which are too well known to you to require repetition.

The report of the United States Department of Labor, which investigated the conditions as exist in these county canning factories, is available for inspection by anyone who so desires. This report shows that many of the children employed in these factories labor ceaselessly from 10 to 12 hours per day. This labor of itself is a great injury to a child in its tender growing years. The child needs all the recreation and good food, clothing and environment it possibly can obtain to equip it for the battle of life. A child beginning life's battle undeveloped, with poor physique and poorly nourished, begins with a serious handicap, which lasts throughout his life. Another important feature in this matter is that the labor in these factories keeps a child away from school a portion of the time it should be in attendance at school. These canning factories are mostly unhygienic and unhealthy places for an adult to work in for long hours, much less the growing child. The living conditions are equally as bad. The homes are but temporary. Makeshifts are the rule. Unoccupied houses, barns, stables and old sheds are most frequently turned into temporary abodes for the laborers in these factories. The buildings themselves are generally old and dirty and insanitary. I understand that as many as 15 families, consisting of fathers, mothers and children, frequently occupy the same building. No provisions are made for the separation of families. All that marks the living quarters of one family from other families is a boarded space a foot high marked off on the floor. There is no separation of the sexes. The surroundings are immoral, and have a vicious effect on the child.

Now, to lower the age to 10 years, as is proposed by the present bill pending before your Legislature, would be greatly injurious not only to the children themselves, but to children of future generations of those who must engage in this work, and for this reason the present measure should not be passed.

Book Reviews.

THE DIAGNOSIS AND TREATMENT OF DIGESTIVE DISEASES. A Practical Treatise for Students and Practitioners of Medicine. By George M. Niles, M.D., Professor of Gastro-enterology and Clinical Medicine, Atlanta Medical College; Gastro-enterologist to the Georgia Baptist Hospital, Wesley Memorial Hospital, Atlanta Hospital; Consulting Gastro-enterologist to the Anti-tuberculosis Association, Atlanta, Ga. With one colored plate and 80 other illustrations. Philadelphia: P. Blakiston's Son & Co. Cloth, $5 net. 1914.

One would think with the number of excellent treatises on gastro-enterology that there is no need for another. Casually speaking, such is the case, but after a thorough examination of the volume before us we are convinced that it has a field to fill. It is particularly adapted to student and general practitioner's purposes, being written in a not too scientific style, thus rendering a sufficiently comprehensive grasp of the subject possible. An outstanding feature of the book is the space devoted to treatment, and it is this feature that should prove attractive to those to whom it is particularly designed. As a practical guide in the common diseases of the gastro-enteric tract it will be found all that is wanted, sufficiently prolix, but not unnecessarily so, to enable the doctor to grasp the subject under consideration without unnecessary waste of time. A pleasing feature of the book is the number of cuts as well as the amount of space devoted to the most modern phases of gastro-enterology, such as the part played by the X-ray in the determination of disease in this portion of the body. We are pleased to give it our unqualified recommendation.

THE PRACTICE OF PEDIATRICS. By Charles Gilmore Kerley, M.D., Professor of Diseases of Children in New York Polyclinic Medical School and Hospital; Attending Physician to the New York Nursery and Child's Hospital; Assistant Attending Physician to the Babies' Hospital; Consulting Physician to the Sevilla Home for Girls and to the New York Home for Destitute and Crippled Children; Consulting Pediatrist to the Greenwich (Conn.) Hospital, to the Tarrytown (N. Y.) Hospital, to the Englewood (N. J.) Hospital, and to the Lawrence (Bronxville) Hospital; Ex-President American Pediatric Society; Ex-President New York County Medical Society. Illustrated. 1914. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Cloth, $6 net.

This book, including index, of some eight hundred pages, is about the most comprehensive single volume textbook on children which it has been our pleasure to see. No aspect of pediatrics seems to be so unimportant as to be slurred. Starting with the

nutrition and growth of the newly born, the author successively enters into a thorough withal concrete exposition of examination and diagnosis, diseases of the new-born, diseases of the mouth and esophagus, of the stomach intestines and peritoneum, the rectum and anus, the spleen and liver, diseases of the respiratory tract, of the heart, the blood and blood diseases, the glandular system, the urogenital system, nervous disorders, diseases of the skin, of the ear, the transmissible diseases, unclassified diseases, miscellaneous subjects, suggestions in management, therapeutic measures, gymnastic therapeutics, drugs and drugs dosage. The book is simply but well written, practical and abounding with helpful suggestions. We are particularly pleased with the therapeutic advice. It is this feature which should make the book very acceptable to the profession. Certainly taken all in all, it is well balanced, most practical and well illustrated. It should receive a most cordial reception from the medical profession, as it is along the lines which tend to popularity, viz., practical.

PSYCHANALYSIS: ITS THEORIES AND PRACTICAL APPLICATION. By A. A. Brill, Ph.B., M.D., Chief of the Clinic of Psychiatry and Clinical Assistant in Neurology, Columbia University Medical School; Chief of the Neurological Department of the Bronx Hospital and Dispensary; formerly Assistant Physician to Central Islip State Hospital, and to the Clinic of Psychiatry, Zurich. Second Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders. Baltimore: The Medical Standard Book Co. 1914. Cloth, $3 net.

Though there has been an immense amount of literature written upon this subject since the appearance of the former edition, the author is still of the same opinion as then; therefore though the present book is much enlarged the new material is only of a confirmatory character and to render the book more practical. This has been accomplished by the insertion of analyzed dreams, discussion of artificial dreams, the unconscious factors in neuroses, collecting manias, pathologic homosexuality, also the addition of a glossary of psychanalytic and psychosexual terms. These additions have tended toward a greater usefulness for the book.

THE CLINICS OF JOHN B. MURPHY, M.D., AT MERCY HOSPITAL, CHICAGO, APRIL, 1914. Published Bi-Monthly. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Paper, $12 per annum. Volume III, No. 2.

The present number of Murphy's Clinics is replete with useful information to the doctor. The introductory article is devoted to a clinical talk on surgical and general diagnosis as prerequisite to good surgery. Nearly anyone can be trained to cut, but this does not make a surgeon. When we speak of a surgeon we mean a man who knows when and when not to use the knife. We are

sorry to say there are few operators who meet these standards. The beauty of Dr. Murphy's talks consists in the elucidation of the above-mentioned principles. He goes thoroughly and systematically into every case before deciding what line of procedure to follow. These pamphlets of his should go and no doubt are creating an identical system in the work of other surgeons in these United States. Dr. Murphy makes use of all clinical and laboratory findings in arriving at a diagnosis, but as he says in his talk on Abderhalden Test in Tubal Pregnancy, he employs the laboratory chiefly as a confirmatory rather than positive evidence. Besides a discussion of three cases of ectopia testis, he considers at length cholelithiasis, acute pancreatic cyst, duodenal ulcer, goitre, vesical papillomata and a series of articles on neuroma.

Diagnostic Methods. By Herbert Thomas Brooks, A.B., M.D., Professor of Pathology, University of Tennessee, College of Medicine, Memphis, Tenn. Second Edition. Revised and Rewritten. St. Louis: C. V. Mosby Company. 1914. Cloth, $1 net.

This little book should prove an invaluable guide to students in history taking, making of routine physical examinations and the common laboratory tests necessary for students in clinical pathology, hospital internes and practicing physicians. The common and most reliable tests employed in sputum, urine, gastric contents, blood, intestinal contents, etc., are fully explained, so that any physician with a modicum of equipment can, if he so desires, carry out the reactions in his own office. It gives us great pleasure to unqualifiedly recommend the book as absolutely reliable in so far as it goes.

Materia Medica, Pharmacology, Therapeutics, Prescription Writing. For Students and Practitioners. By Walter A. Bastedo, Ph.G., M.D., Associate in Pharmacology and Therapeutics at Columbia University; Assistant Attending Physician to St. Luke's Hospital, New York City; Consulting Gastro-Enterologist to the Smith's Infirmary and to the Red Cross Hospital; Consulting Physician to St. Vincent's Hospital, Staten Island; Fifth Vice-President of the National Convention for the Revision of the United States Pharmacopeia; formerly Curator of the New York Botanical Garden. Illustrated. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Cloth. $3.50. 1913.

One would say hastily that enough and sufficiently good materia medicas are already on the market. Rashly and without thoroughly inspecting the present presentation the same opinion would prevail, but a thorough study of the manner and method in which the author presents his subject soon awakens one to a realization that he is dealing with a book somewhat out of the

ordinary. Today too little attention is being given by the physician to the possibilities of the employment of drugs in the combating of disease. Such a treatise as the one before us should go a long way in dissipating this indifference of the profession, as the author by experimentation upon animals and observation upon the sick attempts to demonstrate the actions of the various agents described in the book. Everywhere one is impressed with the great reliance he places upon laboratory investigations in the study of drugs. Here as elsewhere in medicine research is coming into its own, and drugs which were formerly supposed to be of great merit have by these measures been found wanting, and vice versa. The book is admirably adapted to student purposes or the needs of the general practitioner. It gives us great pleasure to put our stamp of approbation upon the book, and we heartily commend it to the consideration of the profession.

The Clinical History in Outline. By Paul G. Woolley, S.B., M.D., Professor of Pathology, College of Medicine, University of Cincinnati; Director of Laboratories, Cincinnati General Hospital, Cincinnati, O. St. Louis: C. V. Mosby Co. 1914. Cloth, $1 net.

As most are aware, the usual hospital history is of very little use. This arises from the fact that students are not properly grounded in this important feature of clinical medicine, so that when they graduate they are at sea when taking a history. To some extent medical schools have recognized this deficiency in their course and are exerting strenuous efforts to correct the deficiency. However, those students and general practitioners who desire a reliable guide in the production of a first-class history will be amply pleased with Woolley's Clinical History in Outline. In general it will be found to supply those seeking such information with the exact thing they are looking for. Here one finds the data required in history taking, the complaint of the patient in his own words, the family history, the personal history, history of the present illness, physical examination and other data necessary to a complete history.

Bedside Hematology. An Introduction to the Clinical Study of the So-called Blood Diseases and of Allied Disorders. By Gordon R. Ward, M.D. (London), Fellow of the Royal Society of Medicine, Medical Society of London, etc. Illustrated. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Cloth, $3.50 net. 1914.

The book is unique in that it deals with the clinical side of the blood diseases rather than the pathological. The medical profession has long been in need of such a book. Here one finds the latest conceptions concerning the blood-forming organs, viz.: the marrow, the lymphoid tissues, the spleen, the liver, the blood

and its cells; the best and [illegible]
blood examination, treatises on [illegible]
disease, Gaucher splenomegaly, leucæmia [illegible]
ing tissues (lymphoma, multiple myel[illegible]
adults, lymphatism), hemophilia, purpura, [illegible]
cholemia, parasitic diseases of the circulating [illegible]
tosis, etc. Chapter XXII is devoted entirely [illegible]
treatment. We agree with the author when he states that [illegible]
of the morbid processes designated "Blood Diseases" are [illegible]
reality diseases of the blood, but of the blood-forming organs.
It is not even the case that the changes in the blood forming organs are necessarily reflected in the blood stream, although this is often so. In Hodgkin's disease and in splenic anemia of adults there is no alteration in the blood in the early stages, and even when this occurs it is of a sort that is shared by many other pathological conditions—in fact, is nothing more than a common type of secondary anemia. The classification employed, though not entirely satisfactory, still, perhaps, with our present knowledge, is as good as any, and should go a long way toward simplifying the so-called blood diseases, and certainly internists and students, by a close perusal of these pages, will arise with a better conception of not only the clinical, but also the pathological, picture occurring in those diseases treated by this volume.

NUCLEIC ACIDS: THEIR CHEMICAL PROPERTIES AND PHYSIOLOGICAL CONDUCT. By Walter Jones, Ph.D., Professor of Physiological Chemistry in the Johns Hopkins Medical School. London: Longmans, Green & Co., 39 Paternoster Row. New York: Longmans, Green & Co. Paper, $1.10 net. 1914.

Though the nucleic acid group constitute the best understood field of physiological chemistry, no comprehensive or complete article reviewing the whole subject has, so far as we are aware, ever appeared in print. The present treatise is therefore indeed welcome, and should fill a vacant niche in physiological literature. Heretofore, when one desired any information on this subject, he was perforce compelled to seek here and there and everywhere for the desired knowledge. Today this task has been greatly simplified by the appearance of this monograph, which briefly, but explicitly, reviews, digests and systematizes our knowledge of the nucleic acids. The book deals with the chemical properties of nucleic acids, the physiological conduct of nucleic acids, etc., including discussions of nuclein, nucleoprotein, nucleic acid, as well as sections on thymus nucleic acid, yeast nucleic acid, the purine derivatives of human urine, the preparation of thymus nucleic acid, the analytical chemistry of the purine derivatives, the analytical chemistry of the pyrimidine bodies, bibliography, etc. It should, indeed, prove invaluable to those physicians working in metabolism, and should lead those workers to a clearer conception of their investigations.

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BALTIMORE, AUGUST, 1914

OBESITY.

PHYSICIANS meet with no more obstinate affections to treat than obesity. Moreover, it is an exceedingly common affliction, therefore a few words upon its treatment seems opportune. It is a metabolic disorder caused either by defective oxidation of the foodstuffs or an excessive intake of food. In health the body appropriates only enough food for immediate purposes; anything in excess is either retained or must be expended in extra muscular energy. According to J. M. Anders, New York *Medical Journal*, excessive alimentation implies retention of energy, and since most of such retention occurs in the form of fat, obesity occurs. It is well known that many fatty individuals are light eaters. The phenomenon is explained on the grounds that there is an abnormally active absorption of those substances that produce fat. Disease is occasionally manifested by obesity, especially some of the diseases associated with disorders of internal secretion. But in most instances Anders is of the opinion that obesity is due to excessive alimentation and lack of exercise, and should be regarded as a symptom rather than a disease. As it is dependent upon so many different causes, its successful combattal depends upon the removal of the underlying factors producing the fat. If an hereditary disposition to corpulency exists, the fat-forming substances should be reduced to a minimum in the dietary and plenty of exercise indulged in. Imprudence in eating and drinking should in every instance be sought and corrected if success is to follow. Any habits which tend to corpulency should be indicted, such as sedentary habits, especially in the phlegmatic and torpid.

If success is to reward any line of treatment the patient must be under the strictest surveillance, and, according to Anders, will fall under three heads—dietetic, mechanical and medicinal. He strongly believes that the reduction in weight must be slowly progressive, and if too rapid the dietary should be made more liberal. This is accomplished principally by the withdrawal of the carbohydrates, and to a lesser degree the fats, from the dietary. The amount of reduction in these substances must be determined for the individual case, and requires time and observation. He permits a limited amount of both carbohydrates and hydrocarbons. According to him, this reduces to a minimum the possibility of digestive disorders or the creation of a gouty diathesis, annoying conditions which are prone to follow other well-known fat-reducing systems. The mechanical management consists in regulated and supervised muscular exercise. As exercise accelerates oxidation, it is but little less important than diet. Besides, it facilitates the destruction of pent-up fat and tones up the circulation and respiration. Naturally, the form depends upon the case. Anders has derived much satisfaction from walking, in combination with gymnastics. Cold and salt-water bathing, followed by massage or rubs, exert a powerful influence in the promotion of oxidation. In those with gouty tendencies warm baths should be substituted for the cold. The medical treatment consists in the taking of the baths, such as Kissingen, Virginia Hot Springs, etc. Thyroid feeding has attained some reputation as a fat reducer, but is dangerous, and should be taken only under the strictest supervision, otherwise unfavorable symptoms may arise, or direct injury may even result. If symptoms of hyperthyroidism arise, tachycardia, nervousness, nausea, thyroid feeding should be withdrawn. Then, the management of obesity resolves itself into the exercise of common sense. See that the afflicted individual corrects his vicious habits and place him under the strictest supervision as regards diet and exercise. If success is to be attained, it is along the dietary and exercise routes rather than medicinal.

Medical Items.

The report of Dr. Winford H. Smith, superintendent of the Johns Hopkins Hospital, for the year ended January 31, 1914, shows an increase in the number of patients and a steady gain in usefulness, efficiency and economy. Within the year the Henry Phipps Psychiatric Clinic was opened. Another important event of the past year was the award of the contract and the beginning of the work on the James Buchanan Brady Urological Clinic. The building is to be six stories high and to have accommodations for 40 public and 20 private patients. Dr. Smith also stated that the greatest need of the hospital at the present time is a fund which will enable them to run the Harriet Lane Home for Invalid Children to its full capacity of 100. There are at present accommodations for only 35 children.

Securities comprising the gift by the General Educational Board of $1,500,000 to the Johns Hopkins Medical School, with which to establish the William H. Welch Endowment for Clinical Education and Research, were delivered to the trustees of the University July 6. The Johns Hopkins Medical School is the first medical institution in the country to receive money for research work from the General Education Board. This will place it upon a full-time basis in all departments. A grant of $750,000 has been made to Washington University, St. Louis, and of $500,000 to the Medical School of Yale University, upon the understanding that they also reorganize their work so as to put their clinical teaching upon a full-time basis.

Simultaneously with the completion of the reorganization of the Johns Hopkins Medical School in accordance with this new plan, the University trustees have chosen Dr. Theodore C. Janeway, hitherto professor of medicine at Columbia University, to become professor of medicine of the Johns Hopkins Medical School, the position once held by Sir William Osler.

The chair of surgery at Johns Hopkins, under the full-time arrangement, is to be occupied by Dr. William S. Halsted, most of whose surgical career has been passed in the Johns Hopkins Medical School, where, since the establishment of the Johns Hopkins Hospital, Dr. Halsted has been its surgeon-in-chief and professor of surgery.

The chair of pediatrics will be occupied by Dr. John Howland, who was called a year ago from the professorship of pediatrics at Washington University, St. Louis, and appointed physician in charge of the Harriet Lane Home for Invalid Children, this institution being the pediatric clinic of Johns Hopkins Medical School.

At a meeting held in Philadelphia on Monday, June 22, attended by 800 members of the American College of Surgeons, a campaign was started to raise a half-million-dollar endowment fund for the establishment, in Washington, D. C., of a permanent home for the institution. Dr. J. M. T. Finney of Baltimore, president of the college, announced that subscriptions amounting to more than $100,000 had been received inside of an hour, and he believed that the fund would reach at least $1,000,000. One thousand one hundred fellowships were conferred, bringing the total membership to over three thousand.

Dr. J. Percy Wade, Physicians and Surgeons, '91, superintendent of Spring Grove State Hospital, Catonsville, who has been spending some time with friends in Frederick, has returned to the hospital.

Dr. John Howland, of 20 East Eager street, who has been abroad, has returned to this country and has gone to Blue Ridge Summit, where he has joined his family. They will spend the summer there.

Dr. and Mrs. J. T. Geraghty, of 2108 Mount Royal Terrace, are spending some weeks in New England.

Dr. Lloyd P. Shippen, assistant surgeon, U. S. N., of 209 West Monument street, was the victim of a bold robbery recently, when burglars forced an entrance to his home and escaped with silverware, clothing and other articles valued at $500. The robbery occurred while Dr. Shippen was spending the day out of town with friends.

Dr. Abraham Samuels, Physicians and Surgeons, '98, of 1928 Eutaw Place, left for a trip abroad on July 14. He will return August 27, when he will resume his practice. Dr. Samuels is associate professor of gynecology at the College of Physicians and Surgeons.

Dr. Hugh H. Young has been elected first vice-president of the Alumni Association of the University of Virginia. At a recent meeting of the American Medico-Psychological Association, held in Baltimore, Dr. Young was elected an honorary member of the association.

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Dr. Clement A. Penrose, of 21 West Mount Royal avenue, left on July 1 for Siasconset, Nantucket Island, where he will spend the remainder of the summer.

Dr. Joseph C. Bloodgood sailed recently for London, where he will attend the fifth annual session of the Clinical Congress of Surgeons of North America, which will be held in London, beginning July 27. Dr. Bloodgood will make two addresses, according to the official program. One of these will follow an address by Sir William Osler, who will discuss "Intestinal Stasis," after which Dr. Bloodgood wil speak on "The Surgery of Intestinal Stasis." The other address by Dr. Bloodgood will be on the "Treatment of Cancer."

Dr. Karl H. Van Norman, for the last two years chief admitting physician of Johns Hopkins Hospital, has been selected as first assistant superintendent of the hospital, to succeed the late Dr. Rupert Norton, who died a month ago. Dr. Van Norman, who has been visiting relatives in London, England, returned to this city July 27 to take up his new duties.

It was announced at the hospital that two members of the hospital staff have accepted appointments to the staff of the Leland Stanford Medical School of San Francisco. Those who will go are Dr. Henry A. Stephenson, resident obstetrician, and Dr. Frank Hinman, assistant resident surgeon. Dr. Hinman will go to California within a week, but Dr. Stephenson will not leave before November. Dr. Stephenson will be succeeded by Dr. Everett Dudley Plass, a former member of Johns Hopkins Hospital staff, who was called to a New York hospital. Dr. Ralph B. Seem, for the last two years in charge of the dispensary and third assistant to Superintendent Winford H. Smith, has been designated as second assistant, succeeding Dr. Van Norman as chief admitting physician.

MARRIAGES.

Francis Berger Trudeau, M.D., Johns Hopkins Medical School, '13, of Saranac Lake, N. Y., to Miss Eleanor Helen Garretson of Morristown, N. J., at Morristown, July 7, 1914. The ceremony was followed by a reception and wedding breakfast at Paul Smith's Casino.

DEATHS.

Samuel Claggett, M.D., University of Maryland Medical School, '98, of Petersville, Md., died from acute kidney trouble at the Maryland University Hospital July 9, 1914, aged 41 years.

Rupert Norton, M.D., for the last eight years assistant superintendent at Johns Hopkins Hospital, died of typhoid fever at the Hospital June 19, 1914, aged 47 years.

George Barr Scholl, M.D., Johns Hopkins Medical School, '02, of 1005 West Lanvale street, died of spinal meningitis on board a tug on its way to Baltimore from Solomon's Island July 9, 1914, aged 39 years.

Henry W. Werner, M.D., of 1427 West Lombard street, died from a complication of diseases at his home July 14, 1914, aged 62 years.

Evelyn Briggs, M.D., Johns Hopkins Medical School, 1900, died at his home in Sacramento, Cal., about May 4, 1914.

William Govane Ridout, M.D., College of Physicians and Surgeons in the City of New York, 1866, for several years a member of the board of governors and visitors of St. John's College, Annapolis, Md.; also a graduate in law, a veteran of the Civil War, in which he served in the United States Navy; once health officer of Annapolis; died at his home in that city June 29, 1914, from the effects of a fall down stairs, in which he fractured his hip, aged 78 years.

John M. Coonan, M.D., University of Maryland Medical School, '61, for two years health warden of the Ninth ward of Baltimore, assistant surgeon of volunteers during the Civil War, and for twenty years connected with the medical department of the army for Indian service, died at his home in Baltimore June 6, 1914, aged 79 years.

Calvin George Mohn, M.D., College of Physicians and Surgeons, '82, for four years postmaster at Laurelton, Pa., and for two terms a member of the General Assembly, died at his home in Lewisburg June 4, 1914, aged 59 years.

John W. Stewart, M.D., College of Physicians and Surgeons, '78, died at his home in Elmira, N. Y., May 25, 1914, aged 63 years.

Benjamin H. Todd, M.D., University of Maryland Medical School, '74, died at his home in Ridgeville, Md., April 23, 1914, aged 50 years.

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CONDENSED SCIENTIFIC INFORMATION FOR REPRESENTATIVES—NO. 6.

SUBJECT: TYPHOID FEVER.

Occurrence.—Typhoid fever is a dangerous and widely distributed infectious disease, especially prevalent in the United States, where there occur annually 150,000 to 200,000 cases, with 20,000 to 25,000 deaths.

Cause.—Typhoid fever is due to the bacillus typhosus, or typhoid bacillus. This micro-organism is taken into the intestinal tract by means of contaminated food or water and locates in the intestinal lymphatic glands. Here it multiplies rapidly and, gaining access to the circulation, is carried throughout the body. While the principal point of infection usually remains localized in the intestines, severe lesions may occur in other organs, such as the liver, gall-bladder, pleura, meninges, etc. From the earliest stages of the disease the typhoid bacilli can be obtained from the blood, and this fact is taken advantage of for diagnostic purposes (as will be explained in a later paper dealing with diagnostic tests).

Preventive Immunization.—That persons may be made immune from typhoid fever has been proven conclusively by the results secured with Typho-Bacterin in the armies of the various countries, as well as in civil communities. The procedure is, of course, based upon the observation that one attack of typhoid fever usually confers upon the individual a permanent immunity against a subsequent attack. Within recent years it has been discovered that immunity from any infectious disease is due in greater part to certain protective properties (antibodies) found in the blood of the immune individual. The stimulation of the production of these protective substances is brought about by the injection of Typho-Bacterin or Typho-Serobacterin, and the individual is thus made immune from the disease.

Bacterin to Use.—Typho-Serobacterin is preferable because of the absence of reaction following its use and the rapidity with which immunity is secured. It is a suspension in sterile physiological saline solution of killed typhoid bacilli, sensitized by special treatment with specific immune serum (as explained in the paper on Serobacterins). 0.25 per cent. trikresol is added for preservation.

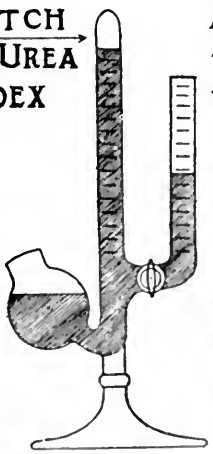
In the suppression of epidemics the Typho-Serobacterin should be preferred, as by its prompt action it is possible to head off infection within twenty-four hours, instead of the five to eight days required when the ordinary bacterial vaccine is used.

How to Administer.—For preventive immunization the three-syringe immunizing package should be employed. The contents of the syringe labeled "First Dose" is injected subcutaneously. The "Second Dose" and "Third Dose" are administered at intervals of six to seven days. This constitutes the complete immunizing treatment. The usual site of injection is the arm at the insertion of the deltoid muscle. Before inserting the needle the skin should be thoroughly cleansed and painted with tincture of iodine.

Dosage for Children.—With the ordinary bacterin Russell* advises that the dose be reduced for children according to weight, considering the average adult to weigh 150 pounds. This state-

*Frederick F. Russell, M.D., Major in Medical Corps, United States Army, and professor of bacteriology in Army Medical School, Washington, D. C.

WATCH the UREA INDEX



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ment is based upon records of immunization of 359 children between the ages of two and sixteen years, immunized by fifty different physicians in many parts of the United States. Where the serobacterin is used it is generally deemed unnecessary to diminish the dose.

Contraindications.—Antityphoid vaccination is generally considered harmless. It is estimated that about 200,000 men have already been immunized with the bacterin used in the United States Army and Navy without a single fatality or serious complication. The number of people having availed themselves of this protective measure in civil communities is nearly as large, and no untoward effects have been reported. In the army the injections are not given to any but healthy persons; if there is any doubt as to possible illness, the treatment is postponed until a diagnosis can be made.

Symptoms Following Administration.—When the ordinary bacterin is used there frequently occurs an inflammation surrounding the site of injection, and accompanied by a rise of temperature and general feeling of illness. This passes off within twenty-four to forty-eight hours. It is believed to be due to the slow dissolution of the killed typhoid bacilli, which results in the liberation of certain toxic products. Typho-Serobacterin, being sensitized, is more rapidly acted upon by the body cells, and the poisonous portion is split up into harmless substances before it can attack the tissues. For this reason the local and general reaction following the use of Typho-Serobacterin are very slight or entirely absent.

Duration of Immunity.—The maximum duration of immunity following antityphoid immunization has not been ascertained. It is believed, however, that a substantial immunity is present in the great majority of cases during the first year and a half, and the degree of immunity present for a long time after is sufficiently effective to prevent infection under ordinary conditions. It is the custom in the army to reimmunize against typhoid fever at the beginning of each four-year period of enlistment. According to Major Russell, this is not because the immunity has disappeared, but to be certain of the maximum of protection among the soldiers. Reimmunization every three years is probably sufficient in civil life, but the immunity should be reinforced if the individual is exposed to infection, as in epidemics, etc.

Accumulated Evidence Regarding the Value of Protective Immunization.—The best example of the effectiveness of antityphoid vaccination is found in the statistics accumulated in the United States Army. During the Spanish-American War, in 1898, in the camp at Jacksonville, Fla., there were over 2500 cases of typhoid fever among the 10,759 troops—nearly one-fourth of the soldiers being attacked, with 248 deaths. Preventive immunization was begun in 1909, and in 1911, in the camp at San Antonio, Tex., which comprised 12,801 men living under the same conditions as prevailed at Jacksonville, there were only *two cases* of typhoid fever and *no deaths.*

Antityphoid immunization was made compulsory in the United States Army beginning September 30, 1911, and in the United States Navy January 1, 1912. The case rate per thousand in the United States Army fell from 3.03 per thousand in 1909 to .26 per thousand, a reduction of over 90 per cent.; and the mortality rates fell from .28 per thousand to 0.3 per thousand, a reduction of nearly 90 per cent.

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Immunization in Civil Life.—Antityphoid immunization should be extensively employed wherever there is a possibility of typhoid infection. It is of especial importance to physicians, nurses, employes in hospitals, and persons who are compelled to live under unhygienic conditions, as in mining camps, etc. Typhoid infection very frequently attacks persons residing in cities who go to the country or seashore, where the typhoid rate is many times higher than in the cities. One of the most important fields of usefulness for antityphoid (vaccination) is the protection of young people, as the disease is particularly prevalent below the age of thirty. In the registration area of the United States, in 1909, there was a total of 3366 deaths in patients under twenty years of age out of a total of 10,722 of all ages. These deaths were distributed according to ages as follows:

Under 2 years	97
Under 3 years	139
Under 4 years	132
Under 5 years	110
5 to 9 years	647
10 to 19 years	2174

It is evident, therefore, that antityphoid vaccination should be made universal in persons under 21 years of age in civil communities.

Typho-Serobacterin Mulford Immunizing is supplied in packages of three syringes, graduated as follows:

First dose	1000 million killed sensitized typhoid bacilli.
Second dose	2000 million killed sensitized typhoid bacilli.
Third dose	2000 million killed sensitized typhoid bacilli.

Both Typho-Bacterin and Typho-Serobacterin are also effectively employed in the treatment of typhoid fever. This subject will be discussed in our next paper—No. 7.

Abstracts.

THE FAUCIAL TONSIL AS A FOCUS FOR SYSTEMIC INFECTION.

Dr. George E. Shambaugh, Chicago.

Paper read at the Thirty-fifth Annual Congress of American Laryngological Association, held May 5, 6 and 7, 1913, in Washington, D. C.

FORMERLY it was assumed that sore throat occurring in connection with acute rheumatism was but a local manifestation in the pharynx of the general systemic infection. It is now generally believed that sore throat in these cases represents the focus of entrance for the systemic infection. Furthermore, it is generally recognized that sore throat, for the most part acute tonsillitis, is very often the immediate cause for other systemic infections, such as acute endocarditis and acute nephritis. It has not been so generally appreciated that the faucial tonsils are very frequently the foci for chronic systemic infections, such as chronic arthritis, chronic neuritis, cardiovascular degeneration and chronic nephritis. The general practitioner, as well as the specialist, has not fully appreciated the importance of the relation existing between

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infections, acute as well as chronic, of the faucial tonsils and certain systemic conditions. Very frequently in ill-nourished children the removal of the tonsils results in such an immediate and astonishing improvement in general health that it can hardly be accounted for except on the assumption that the enlarged harmless-looking tonsils contained foci for a mild systemic infection. In many of the tonsils there are dilated crypts containing the characteristic cheesy deposits which from time to time produce acute infection. The small tonsil embedded under a fold from the anterior pillar, and the tonsil with a deep horizontal fissure separating the upper from the middle thirds, are unusually susceptible to acute infections, and are especially predisposed to the development of latent foci capable of causing systemic infections. Another type of faucial tonsil which is a frequent source of systemic infection is the stub remaining after partial removal, or where the tonsis has been subjected to igni puncture or surface cauterization. The treatment of a faucial tonsil suspected of harboring foci of infection is the same as such foci elsewhere in the body, namely, through removal of the suspected foci.

TREATMENT OF FISTULA IN ANO.

By J. A. MacMillan, M.D., Detroit, Mich.

Read before American Practologic Society, June 16-17, 1913.

THERE are three essentials for the operation for this condition:

(1) An incision that will open up every ramification of the fisculous tract.

(2) The excision of the fibrous tissue which forms its walls.

(3) Free drainage and a regulation of the granulation by means of pressure by gauze packing.

REPORT OF A CASE OF ULCERATION OF THE LARYNX, PERICHONDRITIS OF THE ARYTENOID CARTILAGES, ABSCESS AND PARTIAL EXFOLIATION OF BOTH CARTILAGES RESULTING FROM TYPHOID FEVER.

Dr. J. H. Bryan, Washington.

Paper read at the Thirty-fifth Annual Congress of American Laryngological Association, held May 5, 6 and 7, 1913, in Washington, D. C.

This case is reported in order to emphasize the importance of making regular and systemic examinations of the upper air passages, especially of the larynx, in all cases of typhoid fever, in order to detect the early changes that take place in the mucuous membrane of the upper air passages in this disease. The frequency of this complication in typhoid fever in Europe, according to Landgraf, is 11 per cent. of all fatal cases; according to Griesinger, 26 per cent.; Kanthack, 26 per cent.; Ouskow, 30 per cent. It is difficult to arrive at any conclusion as to the comparative frequency of this complication of typhoid fever in this country and abroad. The figures given by Jackson seem to show that a much larger number of cases of laryngeal involvement occur in this

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country than is indicated by the figures givey by Thompson. The epidemic in which Jackson made his observations was, however, an unusually severe one, and the subjects were largely of a poorly nourished type, and this may account for the apparently greater frequency of this complication in this country. We cannot get at the truth in this matter until more careful observations are made, not only in the hospitals, but in private practice as well.

Excerpts.

CHESTNUT TOXEMIA.

On account of the alleged epidemic of poisonings and deaths from the eating of chestnuts affected with chestnut blight, an investigation was made by C. Dwight Marsh, Physiologist of the Drug and Poisonous Fluid Investigations Office of the Department of Agriculture at Washington, who reports (*Journal A. M. A.*, July 4, 1914), the result of the examinations in Massachusetts and New Hampshire. These resulted, in fact, in demonstrating that there was no case of poisoning that could properly be attributed to this cause. It is well known that raw chestnuts are not very digestible, and some persons have an idiosyncrasy that may render their taking any quantity of them harmful. Most of the detailed symptoms of the cases reported can be accounted for in this way. Feeding experiments on a monkey, white rats and rabbits were entirely negative as regards any harmful effects so far as the nuts from blighted trees were concerned, and the conclusion was drawn that they were no more harmful than those from healthy trees.

GYNECOLOGY AND OBSTETRICS.

In his presidential address delivered before the American Gynecological Society J. Whitridge Williams, Baltimore (*The Journal A. M. A.*, June 6, 1914), criticizes the backwardness of American obstetrics as far as original work is concerned, in an analysis of the published papers presented to the society. He says: "Careful analysis of our transactions has failed to convince me that scarcely a single fundamental contribution to practical obstetrics has been made to this society, and I feel that you will agree with me when you hear the facts." The proportion of papers that he classes as good or excellent contributions is, according to this showing, lamentably small. The lack of productiveness cannot be due to lack of ability of the individual members, but is due in his opinion to (1) the tendency to regard the practice of medicine as an engrossing financial pursuit, (2) to defective ideals and tendencies in medical education, and (3) to the divorce in this country of gynecology from obstetrics. One of the most important factors is our medical education systems, and he asks: How many of us who hold professorships can truthfully say that we are held to the same accountability as heads of true university departments? In most of our schools the chair of obstetrics is the most poorly equipped, and considered only after the others. Lastly, he hopes to see a broadening of the sphere of gynecology to include that of obstetrics as well.

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This fraud, which was exposed at an action tried before the Supreme Court of Victoria at Melbourne, and others reported before in the medical literature, show that every physician should see that his patient gets exactly what he prescribed. No "just as good" allowed.

The Phylacogen Treatment of Hay Fever.

WHILE Mixed Infection Phylacogen was formally introduced to the medical profession in 1912, it was some months later before adequate data as to its value in the treatment of hay fever were available. In 1913 hundreds of cases were reported, details of many of them appearing in the medical press during the latter months of that year. The results from these clinical observations were highly significant, showing a surprisingly large percentage of recoveries and warranting the belief that in Mixed Infection Phylacogen the physician had acquired a formidable weapon for his fight with one of the most stuborn diseases that he is called upon to treat.

Mixed Infection Phylacogen is administered hypodermically. The initial dose should be small, the usual procedure being to begin with a 2-Cc. dose subcutaneously or a ½-Cc. dose intravenously. The reactions occur more quickly, and are ordinarily more severe, following intravenous injection.

"In giving the subcutaneous injection," one writer explains, "I usually select as a site the insertion of the deltoid or the area just below the scapula. The latter seems to be the ideal spot, as absorption takes place very readily and the complaints from the local reaction are much less. I repeat my injection either daily or on.

alternate days, the interval to be determined by the clinical condition of the patient. It is seldom necessary to administer more than four to six injections, the symptoms often disappearing after the second or third injection. Almost immediate relief is noted by the patient. The irritating discharges from the eyes and nose are diminished in amount, the sneezing is lessened, the dyspnea is relieved, and the patient usually sleeps comfortably. All patients that I have treated successfully have remained well through the season. I have yet to record a failure, but I have not had a sufficient number of this class of cases as yet to warrant a positive claim that this remedy will act in all forms of this disease."

Mixed Infection Phylacogen is supplied in 10-Cc. bulbs. As is doubtless well known to most physicians, it is a Parke, Davis & Co. product.

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Until within late years we put this product on the market under the name of Daniel's Concentrated Tincture of Pasiflora Incarnata, but pirates began counterfeiting and forced us to protect the reputation our product had earned, and accordingly we gave it the distinctive name, PASADYNE.

We grow our own plants on a large acreage, and have done so all these years. In the manufacture of our product we draw upon every pharmaceutical advance, for we want to maintain the highest possible standard for PASADYNE (Daniel).

Hundreds of able clinicians have proven to their own satisfaction that PASADYNE (Daniel) is equal in therapeutic power to the older somnifacients, and is free from their disadvantages. Whenever you need a sedative or a soporific, you may prescribe PASADYNE (Daniel) with the fullest assurance that it will produce the result you want. It will not fail you.

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Testimonials Dr. Quayle's Three-Day Drug and Liquor Cure.

Madison, O., May 13, 1913

To the Medical Profession

It gives me pleasure to testify to the merits of Dr. Quayle's Three Day Cure for all Drug and Liquor Addictions, also as to Dr. Chas H. Quayle's integrity, professional standing and personal character as being above reproach, having known him personally for the last ten years.

I have recently treated Mrs. C——, aged 49, who was using 20 grains of morphine per day, and had been for the last eight years, with Dr. Quayle's Three-Day Drug and Liquor Treatment. The results were very satisfactory; in fact, before the three days were up the craving for morphine was gone. She suffered no pain, had no delirium, and as soon as her shattered nerves were restored to health she was a well and happy woman. I heartily endorse and recommend Dr. Quayle's Treatment to all physicians having patients needing same.

Very truly,

(Signed) Wm. Snearer, M. D.

Ashtabula, O., April 9, 1914

Dr. C. H. Quayle,

Madison, Ohio.

Dear Doctor—Enclosed find check for twenty-five dollars ($25.00) for first shipment. As far as I can see, all results are splendid.

Respectfully,

(Signed) J. J. Hogan, M. D.

Geneva, Ohio, April 24, 1914.

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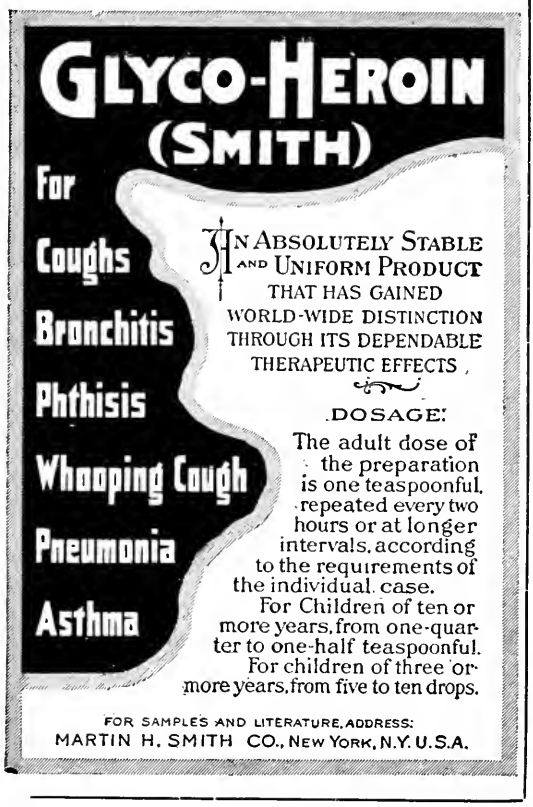
I treated Mrs. B——, who had been taking morphine by mouth and laudanum per rectum for 20 years, with Dr. Quayle's Three-Day Treatment, and can only say that it was entirely satisfactory. After four days' time the patient was entirely rational, and made the statement that she had no desire for the drug. After taking the treatment she was much weakened, but by the end of three weeks she will be able to resume her usual duties without the drug.

Respectfully,

(Signed) Z. O. Sherwood, M. D.



Drug Treatment of Diabetes.

In the treatment of diabetes mellitus opium, of course, has long held first place among therapeutic agents. In the hands of many physicians Papine (Battle) has produced identical results with those derived from the administration of opium or codeine. The employment of small doses at the beginning, and thereafter increasing until the required effects are produced or until narcotic symptoms are exhibited, when the dose will be held stationary or reduced, is the practice usually followed.

A Dependable Preparation of Ergot.

Ergot is undoubtedly one of the most complex drugs in our materia medica. Each analyst endeavors to prove that the principle that he has isolated is the active principle of the drug, and that all others in ergot are subsidiary. The natural result is that the chemistry of ergot is a history bristling with optimism, pessimism and numerous contradictions. In all probability the fact is that it is in the natural combination of all of these active principles that the ideal ergot efficiency is made possible. Certain it is that none of the principles thus far isolated will, when given as an individual agent, produce the full therapeutics of ergot in its entirety. It is, therefore, of vital importance to have a reliable, standardized preparation that will represent all of the active principles of the drug. Among other desirable features of the ideal preparation of ergot are palatability, concentration, miscibility, permanency and suitability for safe subcutaneous use. The only preparation that seems to meet all of these requirements is Ergotole (S. & D.).

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Bacillus Bulgaricus in Gastro-Intestinal Diseases.

The method of treating intestinal infectious processes by implantation of the bacillus lactis bulgaricus appears to be growing in favor with American practitioners. Clock's experience in upward of a hundred cases of infantile diarrhea at the Babies' Hospital of the City of New York, as related by him in the *Journal of the American Medical Association* of July 19, 1913, has undoubtedly played a considerable part in focusing attention upon bacillus bulgaricus therapy. In the instance referred to,

117 cases were treated by the out-patient department staff of the hospital, under Clock's personal supervision. Of this number 116 recovered, the one death occurring in a severe case of enterocolitis which had persisted for two weeks before treatment began. Noteworthy among the results of the treatment were the gain in weight by the patients, despite the number of stools; the rapid change of the stools to yellow; the rapid subsidence of fever, absence of mucus and blood from the stools at the end of 48 hours. "The implantation method of treatment," declared the author, "has progressed beyond the experimental stage, and the results of its use can no longer be questioned or disputed. The treatment has proved of practical, clinical and scientific value, and its simplicity should appeal to every practitioner."

Parke, Davis & Co. offer bacillus bulgaricus (a pure culture) in tablets, the form used by Clock and others in the treatment of gastro-intestinal diseases, numerous cases of which have been reported in the medical press. Physicians will do well to write them for literature.

Phillips' Wheat Phosphates.

(Acid.)

(Representing phosphates similar to those in Wheat).

A Constructive in Nervous and Wasting Diseases.

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A preparation of the phosphates of potash, magnesia, lime and iron. Recommended as furnishing those elements necessary for the restoration of exhausted brain or nerve power.

Food is often taken to gratify the palate, regardless of nutrient value or systemic requirements. Bread, as an example, according to Liebig:

1000 pounds wheat contains 21 pounds of phosphates.

1000 pounds flour contains 5½ pounds of phosphates.

Showing that in the manufacture of superfine white flour phosphates are thrown away with the bran; yet it is generally conceded that the phosphates play so important a part in the animal economy that an insufficient supply in the daily food is the cause of many ailments.

Immediately following continued nervous strain or active mental effort the excretions show a larger proportion of phosphates than ordinarily. If the food, deficient in phosphates, is unable to restore this waste, it must be supplied from other sources, or disorder ensues.

Phillips' Acid [illegible] phosphate [illegible] tered to [illegible] tend of [illegible] and physical [illegible] tive disorders [illegible] ing women, in debility, and [illegible] in diseases [illegible] phosphatic nutrition. From whichever [illegible] benefit. This preparation is being prescribed with satisfactory results as a grateful adjuncant during fever and convalescence therefrom.

This preparation is also put up in syrup, with flavoring (Phillips' Syrup of Wheat Phosphates), making it desirable where the taste is capricious, and presenting a superior excipient for the combination of other medicinal agents.

Mechanical Treatment of Constipation.

The great value of perfect elimination through the bowels in preserving the equilibrium of the various functions has been much emphasized by many authorities, and evidence is at hand to support the view that relief of intestinal stasis is the key to the situation in many cases of chronic ill-health.

The reports to date on the use of heavy Russian mineral oil in stasis are very encouraging, and its use as a lubricant seems very rational, especially in those cases due to lack of proper secretions and dryness of fecal contents.

Petrono (Lilly) is a highly refined Russian mineral oil of high specific gravity. It is superior to our American product, is free from fluorescence, and practically odorless and tasteless. It acts purely in a mechanical way, and is not absorbed from mucous membranes. Petronol cannot decompose in the bowel nor tax the liver; in fact, it is the most perfect mechanical lubricant for the bowel of any agent yet employed for that purpose. It is supplied through the drug trade, plain and aromatized. Send for sample and brochure to the home office, Indianapolis.

The part that the nucleus plays in the development of the cell was discovered by Schleiden in the early thirties, and was corroborated by Schwann at that time, an interesting account of this being found in Victor Robinson's "Pathfinders in Medicine." The cell contents, which he called gum, were carefully worked over by others, each decade finding some new feature, until in time it was pronounced the essential substance of all living cells.—*When Did It Happen? Published by Reed & Carnrick.*

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